

# Factors Affecting the Financing Policy of Commercial Banks in Ethiopia

**W/Michael Shibru**

*Jimma University, Business and Economics College, Jimma, Ethiopia*

**Hamdu Kedir**

*Coresponding Author. Jimma University, Business and Economics College, Jimma, Ethiopia*

+251 47 111 1458

**Yonas Mekonnen**

*Jimma University, Business and Economics College, Jimma, Ethiopia*

## Abstract

*Determining the optimal capital structure is one of the most fundamental policy decisions faced by financial managers. Since optimal debt ratio influences firm's value, different firms determine capital structures at different levels to maximize the value of their firms. Thus, this study examines the relationship between leverage and firm specific (profitability, tangibility, growth, risk, size and liquidity) determinants of capital structure decision, and the theories of capital structure that can explain the capital structure of banks in Ethiopia. In order to investigate these issues a mixed method research approach is utilized, by combining documentary analysis and in-depth interviews. More specifically, the study uses twelve years (2000 - 2011) data for eight banks in Ethiopia. The findings show that profitability, size, tangibility and liquidity of the banks are important determinants of capital structure of banks in Ethiopia. However, growth and risk of banks are found to have no statistically significant impact on the capital structure of banks in Ethiopia. In addition, the results of the analysis indicate that pecking order theory is pertinent theory in Ethiopian banking industry, whereas there are little evidence to support static trade-off theory and the agency cost theory. Therefore, banks should give consideration to profitability, size, liquidity and tangibility when they determine their optimum capital structure.*

**Key words:** Leverage, Capital structure, Trade-off theory, Agency cost theory

**JEL classification:** G21, G 32

## Introduction

Capital structure refers to several alternatives that could be adopted by a firm to get the necessary funds for its investing activities in a way that is consistent with its priorities. Most of the effort of the financial decision making process is centered on the determination of the optimal capital structure; where the firms' value is

maximized and cost of capital is minimized. The modern theory of capital structure was first established by Modigliani and Miller in the year 1958. Following the seminal work of Modigliani and Miller as of 1958, a vast theoretical literature developed, which led to the formulation of alternative theories, such as the static trade off theory, pecking order theory and agency cost theory. Static trade off-theory assumes that a firm's

optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant. Whereas, pecking order theory is another dimension of the capital structure theories. According to this theory capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all fails with equity. Therefore, the firms prefer internal financing to external financing. Agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to this theory capital structures are determined by agency costs, which includes the costs for both debt and equity issue. This shows that theories of capital structure have been resulting in different conclusions.

Similarly, the findings of prior empirical studies have provided varying evidence related to the determinants of capital structure. For instance, Caglayan and Sak (2010) have studied the determinants of capital structure of banks in Turkish and provided evidence that pecking order theory is pertinent theory to Turkish banks. Beside, Buferna et al. (2005) provides evidence that trade of theory and agency are pertinent theories of the capital structure to a developing country. On the other hand, Amidu (2007) on Ghanaian banks supports the static trade-off and pecking order argument. However, in the context of Ethiopia as to the knowledge of the researcher there is no study conducted on the capital structure of the banking industry. In addition, most empirical work on capital structure has predominantly relied on quantitative analysis of secondary data to examine the determinants of capital structure. Therefore, this study will fill the gap by examining the determinants of capital structure in the context of Ethiopian banking industry.

This study has the objective of examining the determinant of capital structure of Ethiopian banking Industry. In doing so the study hypothesized that there is a positive relationship between growth, tangibility, size and leverage and a negative relationship between liquidity risk and profitability.

## **Literature Review**

The literature shows the existence of different theories related to capital structure. These theories include Modigliani and miller (MM), static trade-off theory, pecking order theory, and agency cost theory. Modigliani and Miller (1958) argued that capital structure is irrelevant to the value of a firm under perfect capital market conditions with no corporate tax

and no bankruptcy cost. This implies that the firm's debt to equity ratio does not influence its cost of capital. A firm's value is only determined by its real asset, and it cannot be changed by pure capital structure management. Consequently, it means that there is no optimal capital structure an orderly. Trade-off theory claimed that a firm's optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant (Myers, 1984). The goal is to maximize the firm value for that reason debt and equity are used as substitutes. Pecking Order Theory is developed by Myers and Majluf (1984) which stated that capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all fails, with equity. Therefore, the firms prefer internal financing to external financing. Agency theory focused on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to Jensen and Meckling (1976), capital structures are determined by agency costs, which includes the costs for both debt and equity issue.

Since the pioneering work of Modigliani and Miller (1958), the question of what determines firms' choices of capital structure has been a major field in the corporate finance literature. Since then, several studies have been conducted in developing and developed countries to identify those factors that have an effect on firms' choice of capital structure. Titman and Wessels (1988) studied the determinant of capital structure choice by examining them empirically. They extended empirical work on capital structure theory by: examined a much broader set of capital structure theories, many of which have not previously been analyzed empirically, analyzed measures of short-term, long-term, and convertible debt rather than an aggregate measure of total debt and used a factor-analytic technique that mitigates the measurement problems encountered when working with proxy variables. Titman and Wessels (1988) specifically tested how asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability can affect the firm's debt-equity choice. Their results indicated that debt levels are negatively related to the uniqueness of a firm's line of business. In a comparative study, Rajan and Zingles (1995) investigated whether the capital structure in other developed countries is related to factors similar to those influencing the US companies for the period of 1987-1991 and find that firms with more collateralized assets are not highly levered. In

addition, they found that profitability and market to book ratio are negatively related to leverage.

In the case of Ethiopia, there have been a few studies on determinants of capital structure. These studies include Ashenafi (2005), Amanuel (2011) and Bayeh (2011). Ashenafi (2005) approached the question of capital structure using data from medium firms in Ethiopia. Ashenafi (2005) took variables like non-debt tax shield, economic risk, age, size, tangibility, profitability and growth were regressed against leverage. The results showed that non-debt tax shield, economic risk, profitability, growth, tangibility, and age showed a negative coefficient of correlation with debt to equity ratio. Amanuel (2011) studied determinants of capital structure of manufacturing share companies in Addis Ababa, Ethiopia for the period over 2003-2010. The objective of the study was to examine the relevance of theoretical internal (firm level) factors determine capital structure of manufacturing share companies in Addis Ababa, Ethiopia. Amanuel (2010) used seven explanatory variables: tangibility, non-tax shield, growth, earning volatility, profitability, age and size, and three dependent variables: total debt ratio, short term ratio and long term ratio to establish the determinants of capital structure of manufacturing companies in Ethiopia. The results of OLS regression showed that tangibility, non-debt tax shields, earning volatility, profitability, and size of the firm variables are the significant determinants of capital structure of Addis Ababa manufacturing share companies at least for one of the model out of the three models employed in the study.

## **Research and Methodology**

In order to achieve the objective the study, considering the nature of the problem and the research perspective this study used mixed research approach. A mixed methods approach has been chosen as it increases the likelihood that research generates more accurate results than is the case if a single method had been adopted. As noted in Creswell (2009) mixed research is an approach that combines or associates both qualitative and quantitative research methods. It is also more than simply collecting and analyzing both kinds of data, it involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research. As a result, mixed methods provide a more accurate picture of the phenomena being investigated.

The method adopted consists of structured document reviews and in-depth interviews to collect the necessary

data. Accordingly, the data related to a documentary analysis which is necessary to undertake this study were gathered from the financial statements of eight banks and NBE for twelve consecutive years (2000-2011) and the data was the audited financial statements particularly balance sheet and income statement. Beside, in-depth interview with five finance managers of the selected banks were utilized to gain a greater insight into the findings from documentary analysis. Finally, the study analyses the results obtained from the above mentioned data sources using both descriptive as well as inferential statistics.

### **Descriptive Statistics**

The study examined the determinants of capital structure for eight banks over the time period from 2000-2011. The descriptive statistics of the dependent and explanatory variables for the sample banks were summarized in table 1. The total observation for the each dependent and explanatory variable was 96. Moreover, the table also shows the mean, standard deviation, minimum, median and maximum values for the dependent and independent variables.

The mean leverage of banks was 88.9 percent with the standard deviation of 3.5 percent. This means that more than 88.9 percent of the bank's asset in Ethiopia was financed by debts. This highlights that debt ratio was high in this study. Leverage for the sample period was ranged from 80 percent to 96 percent with a standard deviation of 4 percent.

Profitable firms are stronger to face financial distress and stronger to continue more than unprofitable firms in the future. Profitability, given as the ratio of pre-tax profits plus interest expense to total assets, registered a mean value of 5.03 percent indicating a return on assets of 5.03 percent, and median of 5.2 percent with a standard deviation of 1.2 percent and profitability for the sample is ranged from 1.04 percent to 7.02 percent. This shows the existence of great variation in profit among banks in Ethiopia. Growth was measured as the annual percentage change in total asset and this shows a mean of 25.8 percent. This indicates that, on average, growth rate was 25.8 percent during the twelve - year period and growth in total asset for the sample period were ranged from -94.8 percent to 88.1 percent with standard deviation of 24.4 percent. This indicates the existence of high variation in growth rate among banks in Ethiopia. Tangibility, measured by fixed asset to total asset shows that on average, 1.7 percent of the firms' assets were fixed. The fixed assets to total asset for the sample were ranged from 0.55 percent to 6.6 percent with standard deviation of 1.06 percent. Concerning, the

firms risk which was presented by the standard deviation of operating income (volatility of earning). The mean of this variable was 0.66 percent and the

median was 0.49 percent with a standard deviation of 0.65. Firms vary in adopting risk; for the study sample, risk was ranged between 0.000 to 3.3 percent.

**Table 1: Summary of descriptive statistics for dependent and explanatory variable**

variables	observation	Mean	SD	minimum	median	maximum
Lev	96	0.89	0.04	0.80	0.89	0.96
Pr	96	0.05	0.01	0.01	0.05	0.07
Gro	96	0.26	0.24	-0.95	0.26	0.88
Tang	96	0.02	0.01	0.01	0.01	0.07
Risk	96	0.01	0.01	0.00	0.01	0.03
Size	96	21.79	1.36	18.78	21.68	25.46
Lq	96	0.51	0.14	0.27	0.51	1.16

Note: LEV refers to total leverage. Profitability (Pr), growth (Gro), tangibility (Tang), risk (Risk), Size (SIZE) and liquidity (Lq).

**Source:** Structured review of financial statements and own computations

The mean of the firms' size which was represented by the natural logarithm of total assets was 21.79 and median was 21.68 with a standard deviation of 1.36. Natural logarithms of total assets for the sample were ranged from 18.78 to 25.46. Besides, summary of test statistic shows that the mean of liquidity is 50.6 percent and the median of 50.6 percent with the standard deviation of 14.4 percent. This reveals as there was high variation in liquidity among Ethiopian banks. Beside, for the study sample liquidity was ranged in between 27.3 percent to 111.5 percent.

### Correlation analysis

Table 2, shows the correlation between the explanatory variable and leverage in this study. As noted in Brooks (2008), Correlation between two variables measures the degree of linear association between them. To find the association of the independent variables with the leverage, Pearson product moment of correlation coefficient was used. Values of the correlation coefficient are always ranged between positive one and

negative one. A correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables.

The correlation matrix in Table 2 shows that leverage (dependent variable) was negatively correlated with profitability, growth, tangibility, risk and liquidity of the firm. Which indicates that firm with higher leverage have less profitability, growth, tangibility, risk and liquidity. However, only size have positive correlation with leverage. The result also shows that leverage was correlated at -0.35 with profitability and had statistically significant correlation. Similarly, leverage was correlated at 0.56 with size and had statistically significant correlation. Besides, leverage was correlated at -0.14, -0.02, -0.19, 0.11 with growth, tangibility, liquidity, and risk respectively and had statistically insignificant correlation.

**Table 2: Correlation (Pearson) matrix**

	LEV	PR	GRO	TANG	RISK	SIZE	LQ
LEV	1.00						
PR	-0.35	1.00					
GRO	-0.14	0.13	1.00				
TANG	-0.02	-0.14	-0.05	1.00			
RISK	-0.11	-0.31	-0.43	0.00	1.00		
SIZE	0.56	0.13	-0.03	-0.43	-0.29	1.00	
LQ	-0.19	-0.10	-0.20	-0.18	0.10	0.10	1.00

**Source:** Structured review of financial statements and own computations

### Tests for the Classical Linear Regression Model (CLRM) Assumptions

Different tests were run to make the data ready for analysis and to get reliable output from the research. These tests were intended to check whether the CLRM

assumptions, i.e. the OLS assumptions, are fulfilled when the explanatory variables are regressed against the dependent variables. Accordingly, the following subsection presents tests of CLRM.

#### Test of Normality

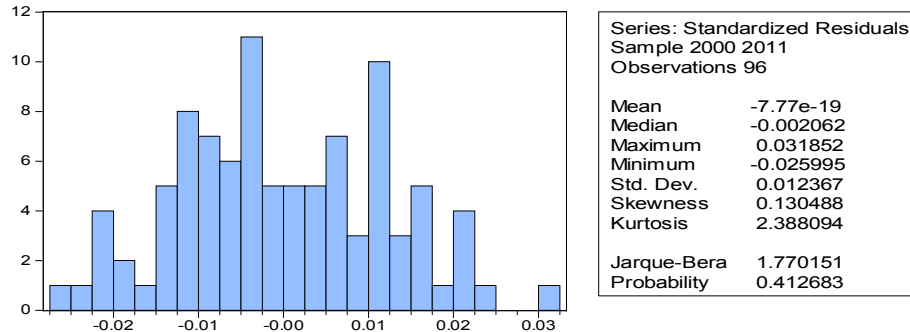


Figure 1: Normality test

Source: Structured review of financial statements and own computations

#### Test of multi-collinearity

In order to examine the possible degree of multicollinearity among the explanatory variables, correlation matrixes of the selected explanatory variables were presented in table 3. Usually the

The normality tests for this study as shown in figure 1 the kurtosis is close to 3, and the Bera-Jarque statistic has a P-value of 0.412 which is greater than 0.05 implying that the data were consistent with a normal distribution assumption.

multicollinearity exists if the correlation between two independent variables is more than 0.75 (Malhotra, 2007). As it appears in the correlation matrix table 3, there were no such high correlation between the explanatory variables. Thus, there is no problem of multicollinearity for this study

Table 3: Correlation matrix between explanatory variables

	PR	GRO	TANG	RISK	SIZE	LQ
PR	1.00					
GRO	0.13	1.00				
TANG	-0.14	-0.05	1.00			
RISK	-0.31	-0.43	0.00	1.00		
SIZE	0.13	-0.03	-0.43	-0.29	1.00	
LQ	0.10	-0.20	-0.18	0.09	0.10	1.00

Source: Structured review of financial statements and own computations

#### Test of Heteroscedasticity

Table 4 presents three different types of tests for heteroscedasticity and then the auxiliary regression in the first results table displayed. The test statistics give us the information we need to determine whether the assumption of homoscedasticity is valid or not, but seeing the actual auxiliary regression in the second table can provide useful additional information on the source of the heteroscedasticity if any is found. In this case, both the *F*- and  $\chi^2$  versions of the test statistic give the

same conclusion that there is no evidence for the presence of heteroscedasticity, since the *p*-values are considerably in excess of 0.05.

The third version of the test statistic, 'Scaled explained SS', which as the name suggests is based on a normalized version of the explained sum of squares from the auxiliary regression, similarly suggests in this case that there is no evidence of heteroscedasticity problem.

Table 4: Heteroscedasticity Test: White test

F-statistic	0.83473	Prob. F(27,68)	0.693
Obs*R-squared	23.8974	Prob. Chi-Square(27)	0.636
Scaled explained SS	17.6486	Prob. Chi-Square(27)	0.9139

Source: structured review of financial statements and own computations

### Test for Assumption of Autocorrelation

As noted in Brooks (2008) this is an assumption that the covariance between the error terms over time (or cross-section ally, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or that they are serially correlated.

Table 6 presents the Durbin-Watson test value for the autocorrelation of residual which is 1.41. The relevant critical values for the test are dL= 1.40, dU = 1.66, and 4 - dU = 4-1.66=2.34; 4 - dL = 4-1.40=2.30.

**Table 5: Correlated Random Effects - Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	168.899377	6	0

**Source:** structured review of financial statements and own computations

### Results of Regression analysis

The model used to find out and explain the association between the dependent variable and the independent variables was:

$$LEV_{it} = \beta_0 + \beta_1(PR_{it}) + \beta_2(TA_{it}) + \beta_3(GR_{it}) + \beta_4(RS_{it}) + \beta_5(SZ_{it}) + \beta_6(LQ) + \varepsilon \dots\dots\dots 1$$

Where:

*LEV*= leverage , *TA* = tangibility, *RS* =risk,

*PR* = profitability, *GR* = growth *SZ* = size

*LQ* =liquidity

This study used panel data models where the random effect and fixed effect models could be used to estimate

**Table 6: Fixed effect model estimates**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.769041	0.046189	16.65004	0.0000***
PR	-1.20848	0.146528	-8.247453	0.0000***
GRO	-0.011816	0.007409	-1.594788	0.1146
TANG	-0.559071	0.235235	-2.376651	0.0198**
RISK	-0.140258	0.273598	-0.512643	0.6096
SIZE	0.010113	0.002151	4.70257	0.0000***
LQ	-0.049525	0.011398	-4.345242	0.0000***
R-squared	0.880471	Durbin-Watson stat 1.405285		
Adjusted R-squared	0.861521			
F-statistic	46.46359			
Prob(F-statistic)	0			

\*\*, significant at 5 percent \*\*\*indicate significant at the 1%,

**Source:** structured review of financial statements and own computations

Accordingly, Durbin-Watson test value is clearly between the lower limit (dL) which is 1.40 and the upper limit which is 1.66 and thus the null hypothesis is neither rejected nor not rejected.

### Random Effect versus Fixed Effect Models

Table 5, presents the Hausman specification test which suggests the fixed effects model was better than random effects model as the p-value (0.00), is less than 0.05 for dependent variables which imply that the random effects model should be rejected and thus, the analysis is based on the fixed effects estimates.

the relationships among variables. An appropriate model for this analysis, testing random versus fixed effects models, was selected. To perform this comparison, the character of the individual effects is tested through the Hausman's specification test. According to Hausman test results shown in table 5, the fixed effects were found to be more appropriate for the model at the 1 percent level. Thus, the relationship between leverage and the explanatory variables were examined by the fixed effects model in this study. The result obtained by the fixed effect model is reported in Table 6.

The fixed effect result in table 6 indicates that profitability was strongly statistically significant ( $p$ -value = 0.00) at 1 percent level and had negative relation with leverage ratio. Similarly, liquidity was strongly statistically significant ( $p$ -value = 0.00) at 1 percent level and had negative relation with leverage ratio. In the same way, size was statistically significant ( $p$ -value = 0.00) at 1 percent level and had positive relation with leverage ratio. Besides, the fixed effect table 6 reveals that tangibility was statistically significant ( $p$ -value = 0.019) at 5 percent level and had negative relation with leverage ratio. But risk and growth do not have statistically significant relationship with leverage with a  $p$ -value of 0.6096 and 0.1149 respectively. Furthermore the table 6 shows that the adjusted R square is 0.86 which indicates that about 86 percent of the variability in leverage is explained by the selected firm-specific factors (Profitability, Tangibility, risk, Growth, liquidity, and Size).

#### **In-depth interview results**

In order to deeply understand how banks choose between different types of finance and its determinants unstructured interviews were utilized with some randomly selected Ethiopian commercial banks finance managers. The interviews were conducted with five finance managers of Ethiopian commercial banks namely, Construction and Business Bank, Commercial Bank of Ethiopia, United bank, Bank of Abyssinia and Wegagen bank. The finance managers were chosen as they are believed to be the most knowledgeable parties about the determinants of capital structure. Besides, the interviews were conducted independently with the official. They were asked unstructured interview questions in relation to the financing of their company. These interview questions were designed to find out the main factors that determine the capital structure of banks, the source of finance that bank mainly use, factors responsible to make equity issue, factors responsible to determine appropriate amount of debt and the influence of change in size on the source of finance.

According to an interview with financial managers of the banks, the factors that can determine the capital structure of banks in Ethiopia were; profitability, size, liquidity, ownership structure, maintaining a target debt-to equity ratio, technology, and government regulation. In addition to this the interviews result indicted that the main sources of finance for their company were deposit, retained earnings, and equity. Regarding factors responsible for making equity issue, the most important factor is to fund a major expansion.

As per the interview with the financial managers, profitability increases the level of leverage in Ethiopian banking industry. According, to the officials profitability increases the good will of the bank in the eyes of the public which will increase their deposit this means in other word profitability has a positive relationship with leverage ratio. Furthermore, the official's revealed banks with high liquidity ratios or more liquid assets prefer to utilize these assets to finance their investments and discourage to raise external funds. Thus, this indicates as liquidity has a negative relationship with leverage ratio. Regarding to the size of banks the officials suggests that as the size of the banks become large there levels of leverage ratio also become high which shows a positive relationship between size and leverage ratio.

## **Findings and Implications**

### **Profitability**

The results of fixed effect model in table 6 indicate that profitability had a negative relationship with leverage, and statistically significant ( $p$ -value = 0.00) at 1% level. Thus, the result was in accordance with the expected sign. This implies that every one percent change (increase or decrease) in bank's profitability keeping the other thing constant has a resultant change of 121 percent on the leverage in the opposite direction. This result also shows that, higher profits increase the level of internal financing in Ethiopian banking industry. Besides, the result reveals the suggestions that profitable banks accumulate internal reserves and this enables them to depend less on external funds. Even though, profitable banks may have better access to external financing, the need for debt finance may possibly be lower, if new investments can be financed from accumulated reserves.

The result of this study is consistent with the pecking order theory that suggests profitable firms prefer internal financing to external financing. Beside, a negative relationship between profitability and leverage was observed in the majority of empirical studies Rajan and zingales (1995), Amidu (2007), and Caglayan and Sak (2010) were some of them. However, Regardless of the above fact, the interview result revealed that profitability has a positive effect on the leverage ratio. This comment suggested that banks with higher profitability will have more leverage in their capital structure, which is in contrary to the above findings of the regression result. This is may be because of the increased good will that profitable banks have in the

eyes of the public, which in turn resulted in an increased level of deposits for them.

### **Size**

The result of fixed effect model table 6 indicates that Size had positive relationships with the leverage of banks, and statistically significant (p-value = 0.00) at 1% level. This implies that every one percent change (increase or decrease) in the banks size keeping the other thing constant had a resultant change of 1 percent on the leverage in the same direction. The results also suggest that the bigger the bank, the more external funds it will use. The possible reason is that, larger banks have lower variance of earnings, and the providers of the debt capital are more willing to lend to larger banks as they are perceived to have lower risk levels.

In addition, the results confirm the concept that large firms can borrow more easily, either because of a better reputation or because of a perceived lower risk due to better diversification. This is largely consistent with the Static Trade-off Theory and agency cost theory. Beside, many previous studies indicated a similarly strong significant positive relationship, for example Titman & Wessels, (1988), Rajan and Zingales, (1995), Booth et al., (2001), Amidu (2007), and Caglayan and Sak (2010) were some of them. The findings from interviews data were also provide further support for the findings of the regression result which demonstrates a positive relationship between size and leverage. Therefore, based on this finding the relationship between size and leverage was in accordance with the expected sign.

### **Tangibility**

The results of fixed effect model table 6 indicate that the relationship between tangibility and leverage was found to be negative and statistically significant (p-value = 0.019) at 5% level. Therefore, the result was not in accordance with the expected sign. The result also implies that every one percent change (increase or decrease) in the banks tangibility keeping the other thing constant had a resultant change of 55.9 percent on the leverage in the opposite direction. This significant negative relationship between tangibility and leverage contradicts with various previous research findings like Rajan and Zingales (1995), Amidu (2007), and Frank and Goyal (2009) which suggest that firm's borrowing capability depends upon collateralizable value of assets (tangibility) and with theories (Static trade-off theory and asymmetric theory) which stated the positive relation between leverage and tangibility.

The likely reason of this relationship might be that banking industry in Ethiopia had a close relationship

with creditors, because the relationship can substitute for collateral. In contrary to the above findings of regression result, the findings from the interview result indicates tangibility is not a proper determinant of bank capital structure. As per the interviews with the finance managers of banks, one possible explanation for this was the use of ownership structure and reputation, in which fixed asset are not used as security.

### **Risk**

Risk was considered to be one of the key factors that can affect the capital structure of banks in Ethiopia. Both theories i.e., static trade of theory and pecking order theory predict a negative relationship between risk and leverage ratio for at least two reasons: first, earnings volatility reduces investors ability to predict about future performance and earnings; second, the higher volatility lead to higher probability of default.

However, there was no support of risk influencing the level of leverage of banks in Ethiopia. The coefficient for risk on leverage was negative and statistically insignificant with the p-value of 0.61. Though, negative sign confirms that risky banks are expected to have less leverage ratio which is consistent with Pecking Order Theory and trade-off theory, but insignificant result indicates that risk was not considered as a proper explanatory variable of leverage in Ethiopian banking industry. This insignificant result was also consistent with the findings of Titman and Wessels (1988) and Amidu (2007). Similarly, the findings from interviews data were also provide further support for the findings of the regression result which demonstrates that risk was not a proper factor that determine the capital structure of banks in Ethiopia.

### **Liquidity**

The results of fixed effect model table 6 indicate that liquidity had a negative relationship with leverage, and statistically significant (p-value = 0.00) at 1% level. Thus, the result was in accordance with the expected sign which state that there is negative relationship between leverage and liquidity. This negative sign shows the inverse relationship between the liquidity and leverage. In other word it implies that every one percent change (increase or decrease) in the bank liquidity keeping the other thing constant had a resultant change of 4.9 percent on the leverage in the opposite direction.

The negative and statistically significant influence of liquidity in this study was consistent with a theoretical analysis of pecking order and agency cost theory, which state that high liquidity firms use internal resources instead of external to finance their projects. Therefore,



this negative effect of Liquidity on leverage was also largely consistent with the empirical evidence of Deesomsak et al. (2004), Ahmed et al., (2010), and Najjar and Petrov (2011). In the same way, the interview with the finance manager of banks indicates banks with high liquidity ratios or more liquid assets were prefer to utilize these assets to finance their investments and discourage to raise external funds. Thus, the findings from interviews support the findings of the regression result which demonstrates a negative relationship between liquidity and leverage.

### Growth

According to the trade-off theory, firms holding future growth opportunities, which are intangible assets, tend to borrow less than firms holding more tangible assets because growth opportunities cannot be collateralized Myers (1977). However, the pecking order theory of Myers and Majluf (1984) predicts that leverage and growth are positively related. For growing firms, internal funds may be insufficient to finance their positive investment opportunities and, hence, they are likely to be in need of external funds. According to the pecking order theory, if external funds are required, firms will prefer debt to equity because of lower information costs associated with debt issues. This results in a positive relationship between leverage and growth opportunities.

The result of fixed effects estimation model table 6 revealed that there was a negative and statistically insignificant relationship between leverage and growth of banks. The negative coefficient of growth indicates a negative relationship between growth and leverage.

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- However, this negative relationship is found statistically insignificant with the p-value of 0.11. Though negative sign confirms that growing banks are expected to have less debt ratio which was consistent with trade of theory and previous empirical findings of Huang and Song (2005) and Olayinka (2011) the insignificant result indicates that growth was not considered as a proper explanatory variable of leverage in Ethiopian banking industry. This insignificant result was also consistent with the previous empirical findings of Titman and Wessels (1988), Ahmed et al., (2010) and Najjar and Petrov (2011). The possible reason may be that the measure (percentage change in total asset) used in this study did not reflect the growth of banks fully. Other more significant results might be obtained by using another measure (market-to-book ratio) for growth which was difficult to use it for this study where there is no active secondary market. In the same way, the findings from interviews data were also provide further support for the findings of the regression result which demonstrates that growth was not a proper factor that determine the capital structure of banks in Ethiopia.

## Conclusions

In conclusion, the finding of the study suggests that profitability, liquidity, tangibility, and bank size were important variables that influence banks' capital structure. However, there were no support of banks' risk and growth influencing the level of leverage of banks in Ethiopia. The results also, confirms that pecking order theory is pertinent theory in Ethiopian banking industry, while there were little evidence to support static trade-off theory and the agency cost theory.

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